



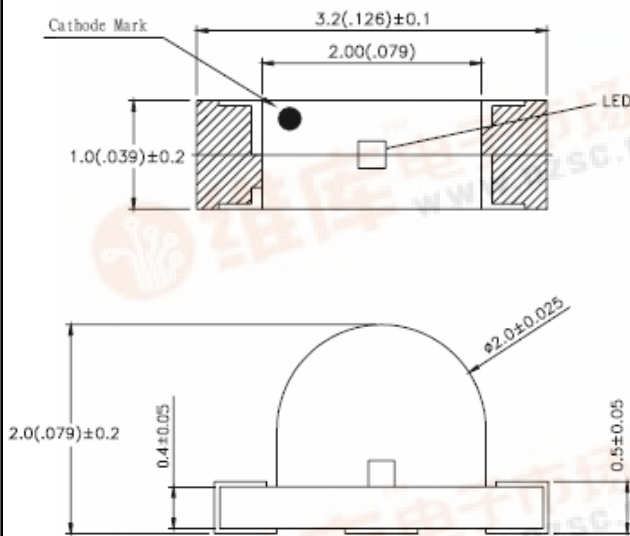
A-BRIGHT INDUSTRIAL CO., LTD.

**SURFACE MOUNT CHIP LED LAMPS**

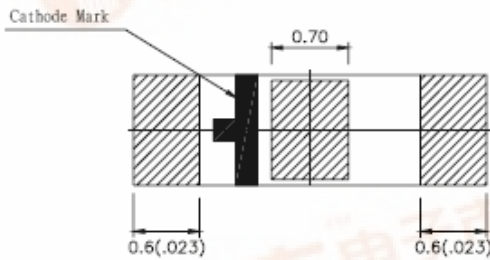
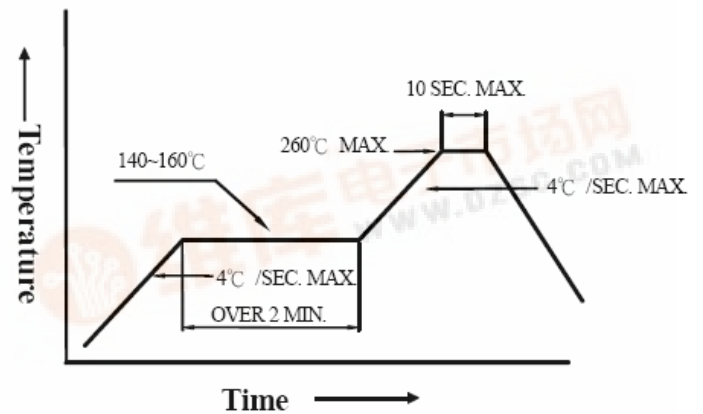
**Right Angle Lens Amber SMD Chip LED Lamps**

Part Number: AL-HA134A

**Package outlines & Re-flow Profile**



■ Reflow Temp/Time

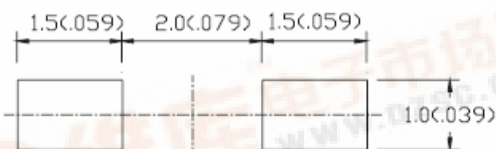


■ Soldering iron

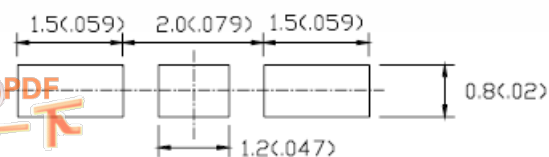
Basic spec is ≤ 5sec when 260°C. If temperature is higher, time should be shorter (+10°C → -1sec). Power dissipation of iron should be smaller than 15W, and temperatures should be controllable. Surface temperature of the device should be under 230°C.

For Reflow Soldering

For upright mounting



For right anoge mounting



ITEM	MATERIALS
Resin (mold)	Epoxy
Lens color	Water Clear
Printed circuit board	BT
Dice	GaAsP/GaP
Emitted color	Amber

NOTES:

1. All dimensions are in millimeters (inches);
2. Tolerances are ±0.1mm (0.004inch) unless otherwise noted.





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## SURFACE MOUNT CHIP LED LAMPS

Part Number: AL-HA134A

### ELECTRO-OPTICAL CHARACTERISTICS

( $T_A=25^{\circ}\text{C}$ )

Parameter	Test Condition	Symbol	Value	Unit
Viewing angle at 50% $I_v$	$I_F=10\text{mA}$	$2\theta_{1/2}$	100	Deg
Forward voltage (Typ.)	$I_F=20\text{mA}$	$V_F$	2.20	V
(Max.)			2.60	
Luminous intensity (Min.)	$I_F=20\text{mA}$	$I_v$	2.4	mcd
(Typ.)			6.0	
Wavelength	$I_F=20\text{mA}$	$\lambda_p$	610	nm
		$\lambda_d$	$610\pm 5$	
Spectral Line Half-Width	$I_F=20\text{mA}$	$\Delta\lambda$	30	nm
Peak pulsing current (1/10 duty f=1kHz)		$I_{FP}$	100	mA

### Absolute maximum ratings

( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Forward current	$I_F$	30	mA
Reverse voltage	$V_R$	5	V
Reverse current	$I_R$	100	$\mu\text{A}$
Power Dissipation	$P_D$	100	mW
Operating temperature range	Top	-25 ~+80	$^{\circ}\text{C}$
Storage temperature range	Tstg	-30 ~+85	$^{\circ}\text{C}$
Lead soldering temperature	260 $^{\circ}\text{C}$ For 5 Seconds		



**A-BRIGHT INDUSTRIAL CO., LTD.**

**SURFACE MOUNT CHIP LED LAMPS**

**Part Number: AL-HA134A**

**Test items and results of reliability**

Classification	Test Item	Reference Standard	Test Conditions	Result
Endurance Test	Operation Life	MIL-STD-750:1026 MIL-STD-883:1005 JIS-C-7021 :B-1	Connect with a power If=20mA Ta=Under room temperature Test time=1,000hrs	0/20
	High Temperature High Humidity Storage	MIL-STD-202:103B JIS-C-7021 :B-11	Ta=+65°C±5°C RH=90%-95% Test time=240hrs	0/20
	High Temperature Storage	MIL-STD-883:1008 JIS-C-7021 :B-10	High Ta=+85°C±5°C Test time=1,000hrs	0/20
	Low Temperature Storage	JIS-C-7021 :B-12	Low Ta=-35°C±5°C Test time=1,000hrs	0/20
Environmental Test	Temperature Cycling	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1010 JIS-C-7021 :A-4	-35°C ~ +25°C ~ +85°C ~ +25°C 60min 20min 60min 20min Test Time=5cycle	0/20
	Thermal Shock	MIL-STD-202:107D MIL-STD-750:1051 MIL-STD-883:1011	-35°C±5°C ~+85°C±5°C 20min 20min Test Time=10cycle	0/20
	Solder Resistance	MIL-STD-202:201A MIL-STD-750:2031 JIS-C-7021 :A-1	Preheating : 140°C-160°C, within 2 minutes. Operation heating : 260°C(Max.), within 10seconds. (Max.)	0/20

\* Refer to reliability test standard specification for in this line.

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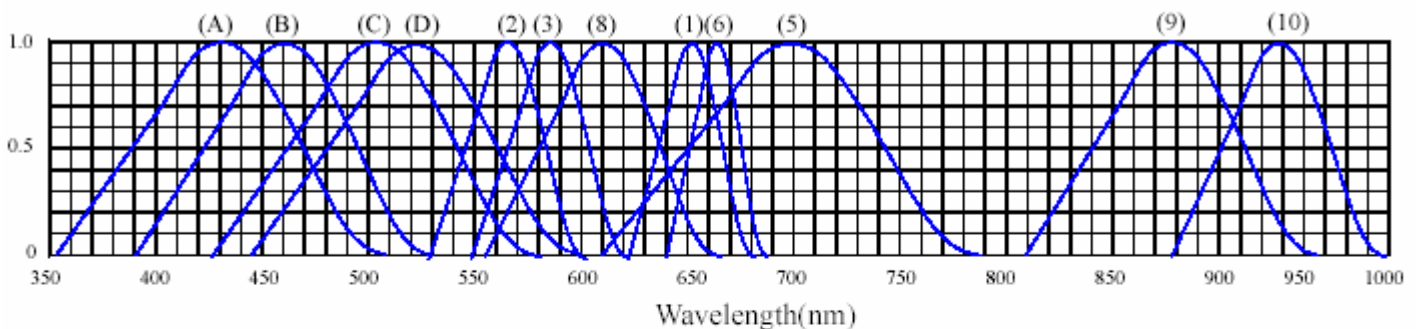
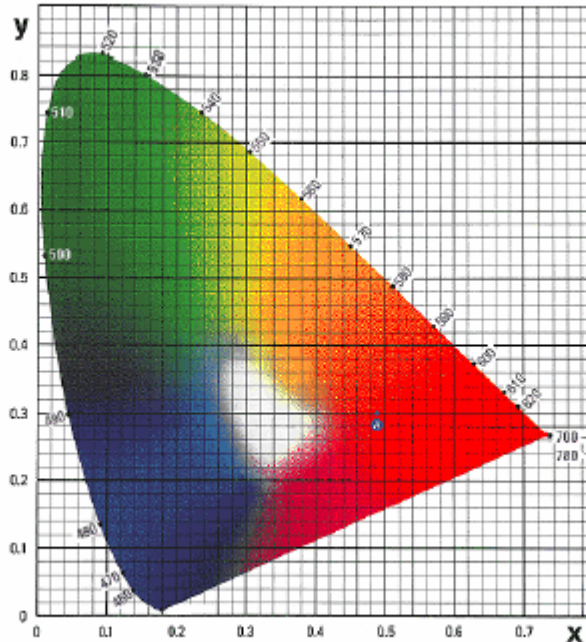
**A-BRIGHT INDUSTRIAL CO., LTD.**

**SURFACE MOUNT CHIP LED LAMPS**

Part Number: AL-HA134A

**Typical Optical-Electrical Characteristic Curves**

◆ TYPICAL ELECTRICAL-OPTICAL CHARACTERISTICS CURVES



RELATIVE INTENSITY VS. WAVELENGTH( $\lambda_p$ )

- (1) GaAsP/GaAs 655nm/Red
- (2) GaP 568nm/ Yellow Green
- (3) GaAsP/GaP 585nm/Yellow
- (4) GaAsP/GaP 635nm/Orange & Hi-Eff Red
- (5) GaP 700nm/Bright Red
- (6) GaAlAs/GaAs 660nm/Super Red
- (8) GaAsP/GaP 610nm/Super Red

- (9)- GaAlAs 880nm
- (10)-GaAs/GaAs&GaAlAs/GaAs 940nm
- (A)- GaN 430nm/Blue
- (B)- InGaN 470nm/Blue
- (C)- InGaN 502nm/Ultra Green
- (D)- InGaN 523nm/Ultra Green

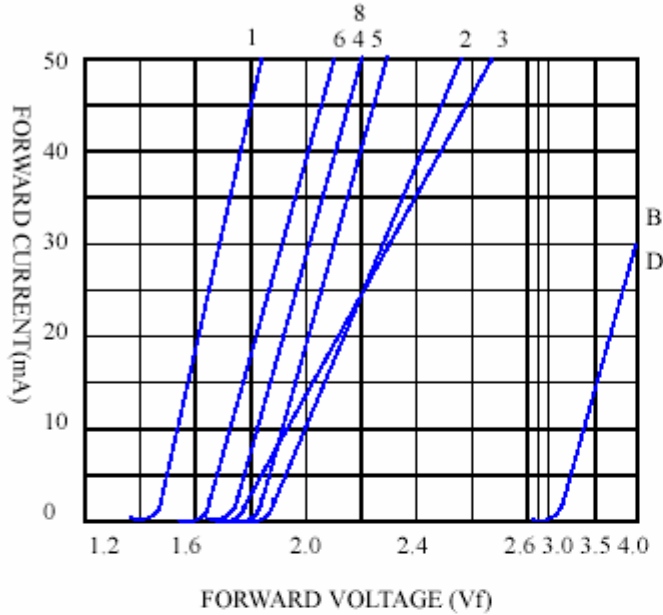
**SURFACE MOUNT CHIP LED LAMPS**

**Part Number: AL-HA134A**

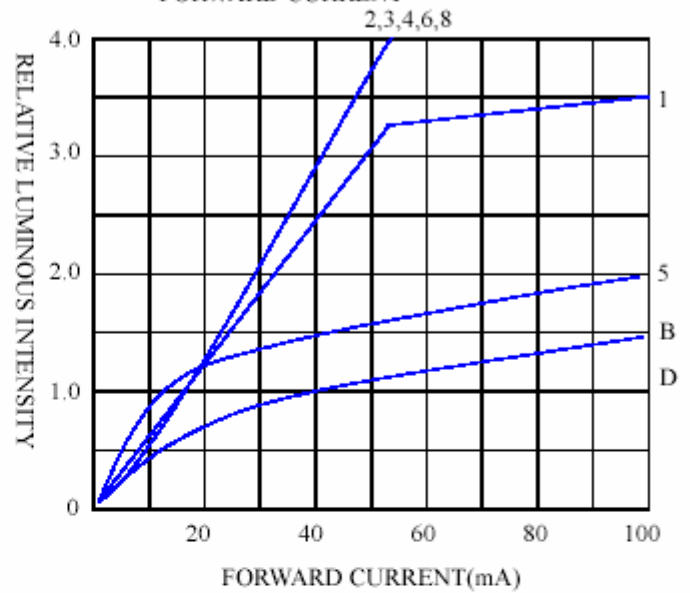
**Typical Optical-Electrical Characteristic Curves**

◆ **CHARACTERISTICS DIAGRAMS**

FORWARD CURRENT VS. FORWARD VOLTAGE



RELATIVE LUMINOUS INTENSITY VS. FORWARD CURRENT



FORWARD CURRENT VS. AMBIENT TEMPERATURE

